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Electrification Section



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A Message from the

ADMINISTRATOR

One way to measure the effectiveness of our program is occasionally to take a look at where we want to go. What are our objectives in REA? Well, here are four of what I consider major goals. Let's see if we are making any progress toward them.

First, there is the goal of getting electricity and a telephone to the farmer. To speed up this job, we have made good progress in faster handling of both electric and telephone loans. We have also made progress in removing some of the road blocks that have been in the way. As a result, the new connections are making a good record in both programs.

Second, there is the job of building financially sound systems. Our efforts to identify the difficulties and to shift our efforts from the places where help is not needed to where help is needed are making progress. The program to put concentrated push back of power use is gaining momentum. Across the board there is more attention being given to matters of financial management than ever before. How well these efforts are paying off only the future can tell for certain. But I am convinced that good groundwork is being laid.

Third, there is the goal of adequate low-cost power. Here we have sought to work with our borrowers in whatever direction spells better and cheaper service. We have made G-T loans where these are necessary. We have encouraged integration and interconnections where these have been to the borrowers' advantage. We have established liaison with AEC in order to take advantage of any cost reduction that atomic energy may bring about.

Fourth, there is the job of building borrower self-reliance. Less dependence on the Government has, of course, been the goal of the REA program since its inception and we have been making progress toward this end as the borrowers procure privately the auditing, engineering inspection and other activities once carried on by Government employees. This has made possible a reduction in administrative costs but, more important, it has developed a stronger, more self-reliant group of borrowers.

No doubt there are other points that could well be included in this list but I have sought to highlight the major ones to show that we are making headway toward the accomplishment of important objectives.

A cursive signature of Andrew Nelson, written in dark ink.

Administrator.

POWER USE WORKSHOP

THE Inter-Industry Farm Electric Utilization Council has been greatly encouraged by the enterprising way the state groups have taken hold of the power use program along the lines presented at the recent area conferences.

Because time is so valuable to everyone working in this program, the Council has arranged a national workshop to be held Thursday and Friday, February 3 and 4, 1955, at the Sheraton Hotel in St. Louis. Two hundred individuals have received invitations to attend the workshop which will be principally directed to the state committees. However, the meetings are open to anyone interested in power use activities.

Thursday morning, February 3

- 8:30—Registration.
- 9:30—12:15—General Session.
- 9:30—9:40—Introductory Remarks by Conference Chairman.
- 9:40—10:10—Address—"Toward a Brighter Future"
Ancher Nelsen, Administrator, Rural Electrification Administration.
- 10:10—11:10—The Farm Market:
A. "Our Agricultural Economy"—
Victor Hawkins, Director of Research, Capper Publications, Topeka, Kansas
B. "Reaching the Farm Market"—
Bill Brown, Gardner Advertising Co., St. Louis, Mo.
- 11:10—11:40—"Building Load to Increase Net Return"—
Edwin Vennard, President, Middle West Service Co., Chicago, Ill.
- 11:40—12:10—Planning a Sales Promotion Program:
A. Kentucky as a Case Example—
J. K. Smith, Exec. Mgr., Kentucky Rural Electric Cooperative, Louisville
B. Kansas as a Case Example—
R. W. McClure, Vice President, Kansas Power & Light Co., Lawrence
- 12:10—12:15—Announcements.
- 12:15—1:30—Lunch.

Thursday afternoon, February 3

Eight concurrent round table discussions will take place Thursday afternoon under a chairman and a specialist acting as an advisor in each field. Each group will explore the assigned topic and the chairman will report to the general session Friday. The topics for group discussion are:

- 1. Market surveys and information—
Chairman: Wm. H. Wisdom, Manager Iowa Rural Electric Cooperative Assoc., Des Moines
- 2. Dealer sales and service—
Chairman: W. W. Lynch, Pres., Texas Power & Light Co., Dallas
- 3. How agricultural agencies can cooperate in a power use program—
Chairman: Oscar Lowery, Public Service Company of Indiana, Plainfield
- 4. The power use program on a local level—
Chairman: O. B. Bryan, Mgr., Cap Rock Electric Cooperative, Stanton, Texas
- 5. Training programs—
Chairman: Allen S. King, Pres., Northern States Power Co., Minneapolis
- 6. Adequate wiring programs—
Chairman: Harry L. Oswald, Exec. Mgr., Arkansas State Elec. Co-op., Little Rock
- 7. Water and plumbing programs—
Chairman: Sam Hord, Mgr., Southern Kentucky Rural Electric Cooperative, Somerset, Kentucky
- 8. Information and education—
Chairman: E. M. Naughton, Pres., Utah Power & Light Co., Salt Lake City

Friday morning, February 4

- 8:30—12:00—Reports of round table chairman, groups 1 through 5.
- Friday afternoon, February 4*
- 1:15—3:15—Reports of round table chairman, groups 6 through 8.
- 3:15—3:30—Closing remarks by conference chairman.

More POWER for Dairyland

Dairyland Power Cooperative's 1954 gross electric power sales to 25 member distribution co-ops in Iowa, Illinois, Wisconsin, and Minnesota, are expected to run well over the half billion KWH mark.

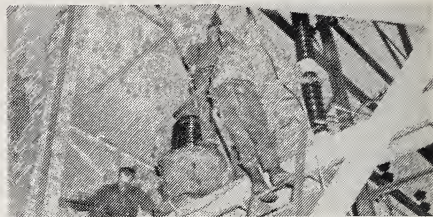
Estimated figures released by Dairyland headquarters in LaCrosse, Wisc., indicate that sales to member co-ops will reach 418 million KWH during 1954, with wholesale power sales accounting for another 212 million of KWH. It all adds up to a prospective substantial gain in electric sales over 1953.

The call for more and more electricity by Dairyland's 83,000 plus consumers has prompted the co-operative's leaders to adopt a long range plan for coping with rising power demands. They are anticipating that power consumption will double in volume in the next 10 years or so. This conclusion is explained by the fact that in 1941 members used an average of 141 KWH per month. By 1953 average consumption stepped up to 367 KWH per month.

Another sign of Dairyland's growing power needs is the increasing peak demands of member cooperatives over the years. Peak demand in 1942 was 12,261 KW. Today it's up to 101,000 KW.

To keep pace with the heavy de-

Dairyland transmission crew clambers about E. J. Stoneman substation while installing a potential transformer.



mand for rural electric power, Dairyland has obtained more than \$60 million in REA loan funds to finance construction of its vast generating and transmission facilities.

Total Dairyland system capacity will be boosted to more than 215,000 KW when the new 50,000 KW "reheat" turbo generating unit is installed at the Alma, Wisc. station in mid-1956.

The new unit, costing close to \$9 million, is of different design than other units installed by Dairyland. Engineering specifications show that it has a nameplate rating of 50,000 KW and an easy peaking capacity of 55,000 KW.

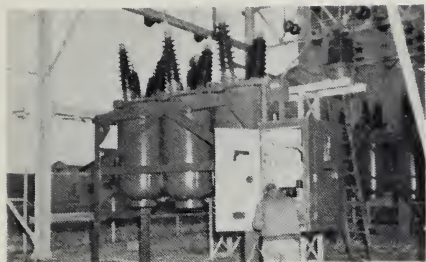
When installed the Alma "reheat" unit will operate at 1450 pounds per square inch pressure. Steam runs through the turbine at 1000°F. Then after passing through high pressure portions of the turbine, the unit cools to about 600°F. with steam pressure dropping to about 500 pounds per square inch.

Steam is next routed to the low-pressure part of the turbine where it is used again. When steam is used the second time it is condensed to water and returned to the main section of the boilers where it is reconverted to steam.

Dairyland's chief engineer, Norman Moser, says of the "reheat" unit, "This process reheats steam to a high



Standing left to right: C. E. Biederman, First Vice President; W. E. Rabe, Secretary. Seated, left to right: H. O. Melby, Treasurer; John Olson, President; and W. E. Garbisch, Second Vice President.



Dairyland test electrician works on oil circuit breaker controls in substation of E. J. Stoneman Station at Cassville, Wis.

temperature instead of converting it to water and then reheating. We figure it will result in savings in fuel costs of around \$300,000 when compared to unit efficiencies of the first three Alma steam units."

The "reheat" unit will be a good deal larger in size and capacity than the 20,000 KW units now operating at the Alma station. Outside dimensions will be approximately 64 ft. long, 18 ft. wide and 13 ft. high.

A winter coal supply of around 150,000 tons with a value of close to \$1 million will be kept on hand when the "reheat" unit goes on the line.

Other Dairyland generating stations include the Genoa steam power station, hydroelectric plants on the Flambeau River, gas-diesel station at Twin Lakes, Chippewa diesel power station, and E. J. Stoneman station.

It can be said that Dairyland is a cooperative of cooperatives. Each member co-op being represented by one member on the Board of Directors and having one vote on how Dairyland shall be run.

What's ahead for Dairyland?

General Manager John P. Madgett, who has guided Dairyland through much of its vast expansion program, answers the question in this way:

"Our Dairyland system continues to prove the basic soundness inherent in cooperative rural electrification and points the way for even greater developments. Dairyland's job is to meet the farmer's demands—ahead of time.

"Take our system planning studies for example. They show that the next block of new generating capacity must be installed at our Alma, Wisc. station by fall of 1956. REA has approved the loan for this addition and we are making every effort to meet or better the present construction schedule. When completed the new 50,000 KW Alma unit will be the largest of all Dairyland generating units to date.

"But even with a total capacity of 160,000 KW we'll still fall short of anticipated long-range load demands. System studies indicate we'll need even greater generating capacity by 1960."



right-of-way CLEARANCE PAYS



IN July this year, the South Central Rural Electric Co-op of Lancaster, Ohio, got something the weather man didn't order—a big blow.

More than one rural power user kept fingers crossed through the night, waiting for power to go off and the co-op's 1,955 miles of distribution line to break down. Some gusts hit 100 miles an hour or more, enough to wreck an electric system.

But instead of a long power interruption, South Central's system had only a few breaks in service and things were running normally again in 24 hours. Imagine how pleased those consumers were.

Did South Central possess a good luck charm? And was this speedy return to power just a fortunate break?

Darwin Kindler, the co-op's hustling manager, laughs off the idea that luck had anything to do with it. It's all due, he says, to good right-of-way care which simply means keeping brush and overgrowth cleaned out from under wires and around poles.

How many times has your co-op sent crews out to do a right-of-way cleaning job only to run smack into the same pesky problem a short time later? It's costly business doing the job over and over, and tough on power users who sit things out when there's line trouble.

Mr. Kindler points out that South Central is beating the right-of-way brush problem by spraying from the air and ground. He's sure a good spray job will do the trick.

Up to 2 years ago South Central spent \$18 to \$20 per mile to keep rights-of-way clear. Today the cost is down to \$9 a mile, due chiefly to improved spraying techniques. That adds up to about \$19,000 yearly saving.

Now for more cost figures. Plane-spraying costs about \$35 to \$40 an acre including insurance, charting the area to be sprayed, spray chemical and putting on the stuff. It would cost around \$60 an acre for the co-op's own ground crew to do the job.

South Central used to send out a crew of 11 men for brush clearing work, using axes, saws and pruning shears. But with improved methods the co-op needs but 5 men.

Mr. Kindler is enthusiastic about



Manager Kindler stands by while spray plane tanks up.

the results obtained from airplane spraying operations. He calls in a plane sprayer whenever brush cover is too thick for ground crews to work. Better results, he believes, are obtained by air-spraying in such cases.

But Mr. Kindler emphasizes that plane-spraying methods are no cure-all and that you have to use good common sense and the right steps for each brush clearing job. Planes can reach those hard-to-get-to spots. There are many such places on the fringe of the Allegheny mountains.

South Central has found that a thorough ground-spraying job gives about 90 percent control of brush and trees, depending, of course, on the density and age of cover. Plane-spraying work gives about 75 to 80 percent control.

Mr. Kindler said the co-op spent about \$50 over the years trying to control a walnut grove along a stretch of rights-of-way. But after each cutting and trimming the trees were just as bothersome as ever. Today a good application or two of chemical spray does the trick.

Two sprayings kill nearly everything along the right-of-way. Then a man with a hand-sprayer can finish off the really tough trees. The hardest ones to kill are ash, maple, hickory and oak. Generally trees like locust, willow, elm, sassafras and poplar are easier to control. They are stunted by the first spray application and then should be sprayed again to kill. The spray begins to work on trees immediately and most plants are killed in a month or so.

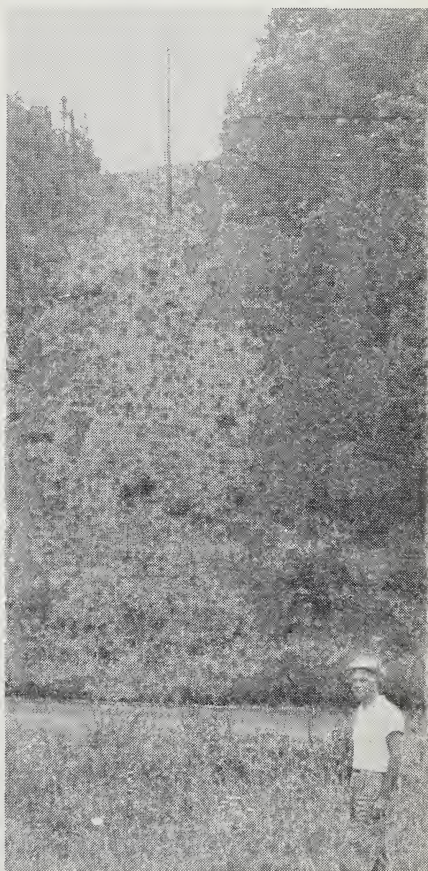
Either 2-4-D or 25-T are good chemical brush "killers," with 25-T being possibly the best bet, in Mr. Kindler's experience. A batch of 5 to 7½ gallons of spray covers one acre. To mix this batch South Central uses from 3 to 6 quarts of chemical and the rest fuel oil. Mr. Kindler likes

the stronger 6-quart dose best for airplane spraying.

The best time to spray by plane is morning or early evening. For best results the wind should be down to 4 to 5 miles an hour.

It's easy to see that the spraying work South Central has been carrying on is paying off. Rights-of-way have a tailored look with tree foliage and brush chemically cropped well back from poles and lines. If a storm hits it's a good bet that right-of-way overgrowth won't be at the bottom of the trouble.

Airplane spraying solved brush problem on this pole line.



EVERGLADES VILLAIN

Problem for Co-op

Along the lush, tropical West Coast of Florida, the lines of the Lee County Electric Cooperative stretch from its headquarters at Fort Myers down past the town of Everglades to a point near the boundary of Everglades National Park.

Included in the system area are islands, swamps, orange groves, cattle ranches, estates, Seminole Indian villages, truck gardens and farms of every type, as well as tourist attractions by the dozens. And the end is not yet in sight. Whenever farmers need new land, the bulldozer and the drainage pump create it out of the swamp. Irrigation and the fertile soil do the rest. It is estimated that the population of the area will increase to three times the present count by 1960.

Manager of the rural electric system serving this section of tropical paradise is Homer Welch, who helped start the cooperative in 1938 and has been running it ever since. Welch and his family live smack dab in the mid-

dle of a 7-acre orange grove. The trees are loaded with fruit and enhanced further by families of mocking birds who live there the year around.

Welch and his board pride themselves on the fact that co-op lines have had much to do with rural progress in the area. It has been board policy to constantly push lines into more remote regions and then see farms, ranches and whole towns spring up in the pathway blazed by electricity.

But the co-op's progress has not been easy. In some instances there are two miles of line over water to reach islands. Use of the swamp buggy is a necessity in many sections. Finding bottom in the Everglades is not always easy when construction crews are out setting poles.

The cooperative has yet to reach Florida's last frontier. There are trading posts and isolated settlements down near Everglades National Park which still lack central station service. When the lines get down that far,



there is a good chance that history will repeat itself and other cities like highly publicized Immokalee will spring up to bring additional new prosperity to rural people.

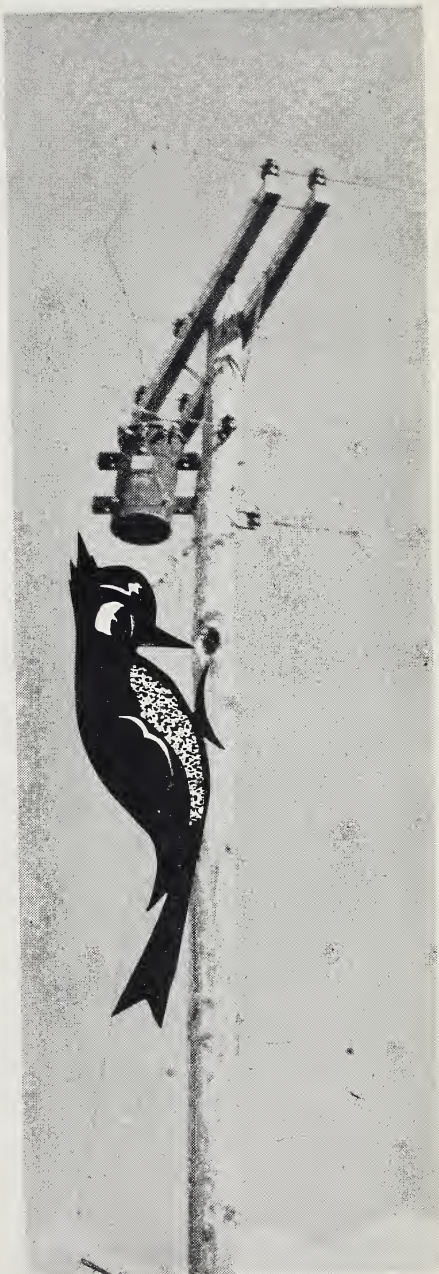
As in an earlier paradise, there's a villain in the act. In the Lee County system area, the culprit is the pileated woodpecker which operates under the protection of Florida game laws. Safe from gunners, woodpeckers develop a remarkable appetite for poles during the nesting season. Within the period of the nesting season a perfectly good pole is so filled with holes that it must be replaced. Lee County linemen are understandably cautious before they climb. In many instances they are forced to use a hoist from truck rather than take a chance of the pole breaking.

Out of 16 years of experience in battling woodpeckers, Manager Welch is of the opinion that the birds attack the poles out of just plain cussedness. A new pole coated with creosote is just as likely to be damaged as an older one. At one stage, when Welch had sidearms built on the poles, the birds stopped pecking for a little but by the next nesting season they were chewing on the sidearms as well as the poles.

The woodpecker is more than an annoyance, he's a real expense. Many of the poles set in swamps are expensive installations sometimes with concrete base and heavily guyed.

Within a few months, however, there are likely to be some Florida woodpeckers with badly bent bills. Manager Welch has discovered a concrete pole of a type used in Germany and plans to install it in the Everglades as replacements are needed. Even though the concrete pole will require that line crews get a new set of climbing equipment, Welch is convinced that his co-op will get real savings out of the new installations.

Of course, if the pileated woodpecker develops a taste for concrete then all bets are off.



Villain at work.

THE LINEMAN



ACCIDENT reports submitted to REA in the first 11 months of 1954 show 41 cases of head injuries suffered by linemen on rural electric systems. Two accidents were fatal.

National figures collected by the National Safety Council over a 5-year period indicate that 6 percent of all disabling accidents have been head injuries. Virtually all these injuries were caused by falling objects or by the individuals bumping into something.

The number and variety of things falling down from poles and hitting linemen on the head is such as to emphasize once more the need for linemen to wear hats while working around poles.

Here is a partial list of objects which fell from poles and injured rural electric system linemen during 1954: steel hand line block, 3 cases; hammer; "A" frame, 2 cases; hoist, 2 cases; bolt; winch hook; dead end bells; tree limb, 2 cases; hot stick, 4 cases; small tree; bolt clamp; broken insulator; wire grip, 2 cases and a wrench. There is no way of estimating exactly the number of near misses but the number of direct hits was high enough to indicate that there was a substantial number of them.

Quite frequently in line work the object bumped into is a conductor or piece of equipment energized with high voltage. A mashed hand can be either healed or cut off depending upon the circumstances of the particular case. A mashed or fractured human head presents a more serious problem. There is not much that can be done to remedy the damage. For instance, an A frame fell and struck a lineman squarely on top of the head. He was killed instantly. Another

falling A frame struck an employee squarely on top of the head. He was wearing a hard hat designed for the purpose of giving head protection from falling objects. The force of the blow was so great that his neck, spinal column and leg joints were sore for several days afterward. The hat was damaged but he was not seriously injured. It is axiomatic that preventing injuries is more effective than curing them and this is doubly true with respect to head injuries.

The advent of cloth laminated plastic and fiber glass impregnated with polyester resin made possible the manufacture of what is known as the "Hard Hat." Hats made of these materials are highly resistant to impact, oil and moisture and have high insulating quality.

These hats have the ability to "roll with the punch" so to speak, when struck by an object. The force of the blow is distributed over the entire head instead of in one small area. The suspension band holding the hat away from the head together with the "rolling" effect cushions the blow and dissipates part of its force.

Many rural electric systems now furnish these hats to outside employees. The electrical industry generally is looking upon this equipment favorably. Enough so, that the National Safety Council is working up a data sheet on hard hats. It should be available within a short time.

Are hard hats cold in winter? No, several types of liners are available which make them as warm as, if not warmer than, the conventional variety of head wear.

PIONEER



Richard Haeder, Sr., is a practical visionary. A pioneer in rural electrification in his own state of South Dakota, he thinks great accomplishments for rural electrification are still ahead.

"Rural electrification is still in its infancy," he told the South Dakota Rural Electric Association last winter when it presented him with its annual commendation for outstanding service to rural electrification—the highest award in its power to bestow.

He added, "The impact on our ability to produce is tremendous, and only a few of the possibilities in preservation of food, handling and storing of grains and hay, and in the dairy have been explored."

Mr. Haeder's life is like a page from Horatio Alger. He came to this country as an immigrant in 1913. He operated a 2500-acre ranch near Yale. By 1921 he had accumulated considerable property, but lost his machinery and stock in the depression and drought.

He became active in rural electrification in the early days in South Dakota. From 1944 to 1949 he was coordinator and manager of the Spink and Beadle Electric Cooperatives during their organizational years. He was the second president of the Statewide association, and was a director of the National association in 1946. He is now a director of Beadle Electric, Huron.

Mr. Haeder, whose home is at Wolsey, operates one of the largest dairies in the state, milking 45 to 50 cows. He practices diversified farming, producing alfalfa, grasses, oats, corn and wheat.

Although now 63 years old, he is looking forward to a trip to Europe. He is still active in farm organizations, including soil conservation and farm credit work. He was president of the first voluntary soil conservation district in the United States in 1937, and attracted national attention with his conservation methods of farming.



On November 17, Steelville, (Missouri) Telephone Exchange buried the Old Cranking Phone with all due pageantry. It was a day of civic celebration with bands, floats, strutting majorettes, free barbecue and group singing. Guest speaker for the occasion was REA Administrator Ancher Nelsen. Mr. S. H. Hicks, president of the company, made the response for the exchange. At 2:00 o'clock, Mr. J. C. Lark placed the first call over the new system to Governor Phil M. Donnelly, whose response was heard by the assembly via a loudspeaker attached to the telephone. A Certificate of Quality Service was presented to the members of the board of the new telephone system.

The Heated Hunter

Umtilla Electric Cooperative Assn., Hermiston, Ore., reports the following modern improvement:

"For many years, Herman Lorenzen, an ardent goose hunting enthusiast, has been bagging his share of waterfowl. The only thing that he doesn't like about hunting geese is the cold weather he encounters and he says that many times he has practically frozen to death after spending several hours in a goose blind.

"His goose blind is located close to the power lines of the U.E.C.A. and after concluding that the cost of electricity would more than pay for itself in comfort, he applied for service to his blind.

"He is now remodeling his blind with plywood paneling and wiring it for an electric heater to provide him warmth during the cold winter months. He also plans to have an electric coffee percolator and a radio to complete his modernized goose blind."



Southwest Louisiana Electric Membership Corp., Lafayette, La., has adopted a promotional rate to stimulate the installation of electrical home heating units. The rate is applicable only if electricity is the sole source of heat. New homes require the installation of a separate meter. The rate is applicable from October 1 to March 31.

Minnkota Power Cooperative, Grand Forks, N. D., is circulating a new color film titled "Modern Miracles in Minnkota Land." The motion picture runs 20 minutes and explains the purpose and need of the generation and transmission system.

POWER EXCHANGE



North Central Electric Cooperative, Attica, Ohio, has adopted a plan to award college scholarships to boys and girls in the system area. The general rules of the plan provide:

1. North Central will furnish a boy and a girl a 4-year scholarship worth \$400.

2. Senior students in high schools in the area served by the Cooperative may enter as candidates. They need not live on North Central lines, but must live outside an incorporated village or city.

3. The scholarship awards may be used in any college chosen by the winners, providing the college is a member of the state association of colleges of the state wherein the college is located.

4. Awards will be determined on the basis of a competitive examination held in a central area. The examination will be comparable to the Senior Scholarship Tests sponsored by the State Department of Education.

5. The winners of the North Central scholarship awards will be privileged to enter a state contest arranged by the Ohio Rural Electric Cooperative Association to compete for additional \$500 scholarship.

White County Rural Electric Membership Corp., Monticello, Ind., publishes the names, addresses and phone numbers of all electricians in the system area as a service to its members.

Codington-Clark Electric Coopera-

R USE ANGE



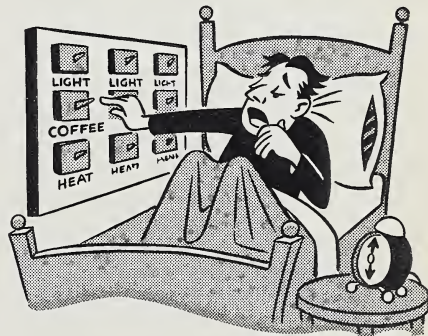
tive with headquarters at Watertown, S. D. is installing a lobby billing station at the entrance of the headquarters building which will be open 24 hours a day. It will be equipped with a desk, lights, pencils, energy slips, check blanks and a deposit slot. Members will be able to pay their bills by check any time of the day or night.

Jim Sayer, Electrification Advisor, Northern Electric Cooperative Assn., Virginia, Minn., uses the co-op newsletter to promote safe use of electricity on the farm. This is what he has to say about water pumps: "Approximately 17 per cent of rural fires start on the roofs of buildings. Many of these could easily be put out if water were available. An automatic electric pressure water system, with a capacity of eight to ten gallons per minute at thirty pounds pressure, and three-fourths inch garden hose with a nozzle, will reach the top of the roof of ordinary farm buildings. If the pump is wired from any of the buildings, no water will be available once the wires have burned and shorted out.

"Your pump should have an underground service direct from the **HOT SIDE** of the yard pole breakers."

The Alabama Rural Electric News, official newspaper of the Alabama Rural Electric Association, recently hit the jackpot in stimulating reader response by offering a prize for the answer to the question "If you should awake some morning to learn that you never really had electric service—that rural electrification had been only a dream, what would you do?"

Hundreds of readers responded. This answer won the prize: "If I were to wake up some morning and find that we never really had rural electrification. I think the first thing I would do would be to get out and tell people of the wonderful experience I had in a dream. And I would try to get the people to organize and make that dream come true. For once you had something as wonderful as rural electrification, if it were only in a dream, you couldn't see how the people could get along without it." Mrs. Carrie P. Holder, Tennesse, Ala.



The newsletter of the Whitley County Rural Electric Membership Corp., Columbia City, Ind., pulls out the exclamation marks to tell about a modern kitchen and remote control wiring installed in the new home of a member. There's a master control in the family bedroom which handles 9 different points of lighting. This includes remote control of starting the coffee percolator in the kitchen while still under the blankets.



4-H Electric Winners



Shown in the photograph, left to right, are: Joe Young, Alabama; Wesley Jacobsen, California; Robert Rees, Kansas; Charles Canada, North Carolina; Mary Anne Foster, Virginia; Paul Cooper Davis, West Virginia; and Mark W. Cresap, Jr., of sponsoring Westinghouse Corp.

AROUND 100,000 rural young people have been hard at work during the past year on 4-H Club electric projects that range all the way from building a grain and hay elevator to making a hearing aid for a deaf dog. In between are such accomplishments as constructing an automatic pea-sheller, revising the entire lighting arrangement of the family home, and producing a time switch from a tin can, the works of an old clock, a magnet, wire and friction tape. These electrical achievements were rewarded last December, at the annual 4-H Club Congress in Chicago, when 43 state winners (36 boys and seven girls) received expense-paid trips to the Congress.

Six of the state winners—five boys and one girl—were selected for national honors. In addition to the trip to Chicago, each of these received a \$300 college scholarship. It was an exciting evening for these young people as they accepted the valuable awards from Mark W. Cresap, Jr., vice president and assistant to the president of the Westinghouse Electric Corporation. (National winners shown in accompanying photograph.) Each of the forty-three young people found an additional bonus in a large

box at the banquet table—for the boys a $\frac{1}{3}$ h.p. electric motor and for the girls an electric steam iron.

Gathered at the banquet to do honor to these enterprising young people were 4-H Club leaders, extension service agents, and representatives of power suppliers from the different states. Roy G. Zook, Assistant Administrator in charge of the Electric Program, represented REA Administrator Ancher Nelsen at this affair.

Sixteen of the 4-H state winners (12 boys and four girls) live on farms served by REA-financed rural electric systems. Many of these said that they had received valuable help from the cooperative supplying power to the family farm, and gave special praise to the electrification advisors for the advice and encouragement they'd offered on many projects. Many cooperatives are boosting 4-H activities in such ways as furnishing a meeting place for the local club, supplying speakers and educational films for meetings, sponsoring leader training clinics, and offering prizes of electrical appliances or cash in local contests.

This increasing cooperation with the 4-H electric program undoubtedly is due to the proof of its value which

co-op managers are seeing demonstrated in their own communities. More and more every year they recognize it as an important means of teaching young people to use electric power to save labor and to raise farm living standards. For example—Gerald Burmeister, this year's winner from Minnesota, has won blue ribbons at county and state fairs by demonstrating the installation of a hen-house time clock. He's also installed heat lamps in the pig brooder, built a two-way bell system and a yard light. The Ohio winner, Erwin Loy, built an electric fan for drying grain and hay. Samie Juanita Lee of Tennessee has designed her "dream house", including the wiring and lighting. Marvin Lee Mott, the Texas state winner, used scrap metal he found around the farm to build an air conditioner.

The 4-H Electric Program is conducted by the Extension Service of the State Agricultural Colleges and the U. S. Department of Agriculture. The awards are presented by the Westinghouse Educational Foundation, which now has given a total of 105 college scholarships during the years in which they have sponsored the program.

The chance of winning a scholarship—or at least the state award of a trip to the Club Congress—is, of course, a strong incentive to the thousands of 4-H boys and girls who work at electrical projects every year. The ingenuity and inventiveness which they display certainly indicate that the program is attaining its objective—to awaken in 4-H Club members an interest in electrical methods and equipment, and to help them develop skills in using electric power effectively on the farm and in the home.

Following is the list of national winners in the 1954 4-H Club Farm and Home Electric Program and of

those State winners whose homes are served by the lines of REA-financed rural electric systems:

NATIONAL WINNERS

- ALABAMA:** Joe Young, 16; Alabama Power Company
CALIFORNIA: Wesley Harold Jacobsen, 16; Pacific Gas & Electric Company
KANSAS: Robert Leonard Rees, 18; Coffeyville Municipal Power & Light Company
NORTH CAROLINA: Charles W. Canada, 17; Duke Power Company
VIRGINIA: Mary Anne Foster, 18; Virginia Electric Power Co.
WEST VIRGINIA: Paul C. Davis, 17; Appalachian Electric Power Company

STATE WINNERS ON REA-FINANCED RURAL LINES

- ARKANSAS:** Nancy Lee Neece, 18; Arkansas Valley Electric Co-op.
DELAWARE: William Bonner Murphy, 17; Delaware Electric Co-op, Inc.
FLORIDA: Inez Hare, 17; Clay Electric Co-op, Inc.
GEORGIA: Joy Hill, 17; Jackson Electric Membership Corp.
ILLINOIS: Bob Walter, 17; Southern Illinois Electric Co-op.
KENTUCKY: Nelson McCall, 19; Clark Rural Electric Cooperative Corp.
MINNESOTA: Gerald Arthur Burmeister, 16; Meeker Cooperative Light & Power Assn.
MISSOURI: Larry Lee Rosenbohm, 15; Northwest Missouri Electric Co-op.
MONTANA: Robert Frank Woodmansey, 18; Sun River Electric Co-op, Inc.
NORTH DAKOTA: Chris Leier, 20; KEM Electric Cooperative
OHIO: Erwin Jay Loy, 18; Belmont Electric Cooperative, Inc.
SOUTH CAROLINA: Herbert Martin Richardson, 19; Aiken Electric Cooperative, Inc.
SOUTH DAKOTA: Robert LaVern Moe; Inter-county Electric Assn., Inc.
TENNESSEE: Samie Juanita Lee, 19; Volunteer Electric Co-op.
TEXAS: Marvin Lee Mott, 16; Limestone County Electric Cooperative, Inc.
WASHINGTON: Richard C. Teel, 18; Lincoln Electric Cooperative, Inc.

Youth Lights the Way

**Lamp-building
the 4-H Club way.**



SOME 50,000 table lamps have been built by Ohio 4-H Club members the last five summers under the "better lighting" program sponsored by the rural electric co-ops of the state and the Ohio Power Co.

Key feature of the program is the series of "lamp-making" classes which have become a regular part of the Club's summer camp course of craft instruction.

The lamps are cleverly designed and just the ticket for a den or playroom. They cost club members \$2 and are put-together piece by piece.

At the Piedmont Lake Camp, near St. Clairsville, this summer boys and girls from several counties assembled well over a thousand lamps under their young instructor, Gary Hoover. Gary knows a lot about home lighting techniques. He was one of six national winners last year in the 4-H Club Farm and Home Electric Program.

From Gary we got the facts about lamp-making 4-H Club style.

Said he, "Camp periods run four days and there are three one hour classes each morning for lamp-builders. Each class has around 20 youngsters on the lamp assembly line.

"As a rule it takes about three hours to put all the pieces together and ready a lamp for use. Lamp-making is really popular with the kids."

Here are the electric co-ops which teamed up with Ohio Power in carrying out the lamp-making program at Piedmont Lake this summer: Tuscarawas-Coshocton, Washington, Guernsey-Muskingum, Carroll and Belmont.

Paul Bruns, rural representative for Ohio Power, spent the summer season working with 4-H Club lamp-making classes. He has this to say about the state-wide program that is changing the reading habits of young people.

"We feel the learn-by-doing approach to better lighting has paid off handsomely in Ohio. It's one thing to switch on a table lamp and settle down to read, and quite another to see that you and the lamp beside you are working together for safe, comfortable lighting.

"Of course Ohio Power and electric co-ops are proud of putting over 50,000 new lamps in young peoples' homes. But what is more significant is the way young folks are swinging into better lighting habits."

Another REA borrower, Millington Telephone Company, Inc., of Millington, Tennessee, is sending a newsletter to its subscribers. "Dial Tones" is the four-page monthly booster for the company.

report to the MEMBERS

By Hobart C. Adams, Manager
Grayson Rural Electric Cooperative Corporation

WE search for every method beneficial to the farmer, every method that will be of value to the farmer that will enable him to use electricity. If we recommend any electrical appliance or too, we feel sure it will work. We know that the farmer will eliminate anything that doesn't pay its way. Therefore, it would be bad business for us to push any item that would prove inefficient in operation to our members.

I have after studying every possibility discovered a new load building item that surpasses anything we have ever recommended. This has proven beyond any doubt to cause the increase in the consumption of electricity beyond any scope of my imagination. A few days ago I brought home from the hospital my wife and brand new baby. Since that day the

hot water has flowed freely day and night. The electric range has sterilized bottles, nipples, and all that feeding equipment. The automatic washer is running full time and gasping for a rest period. Every light in the house comes on at about two hour intervals all through the night. The refrigerator door stands open while we hurriedly grapple for a bottle to keep down the squawking. Our furnace is running at excessive heat. We keep the T. V. set going for our many visitors and admirers. The ironing of the clothes continues on with no relief in sight. The linens and the clothes pile up waiting their turn to get to the washer. The baby baths, the sink full of dishes, thousands of gallons of water must be heated. This turns the meter disk with the hum likened to the revolutions of an airplane propeller.

NEW SOUND FILMS CATALOG AVAILABLE FROM WESTINGHOUSE

A 36-page catalog providing complete information on Westinghouse sound motion pictures and slide films is now available from the Westinghouse Electric Corporation.

This film guide covers a variety of subjects, and provides complete film information that will assist in promoting showings to all organized groups, such as church, social, professional, civic and business.

For easy reference, the film subjects are listed and classified into three groups; general interest, product information, and training films and instruction courses.

Easy-to-use order forms are enclosed with each catalog. The sound films, both in color and black and white, are loaned at no charge and are available in 16-mm size.

For a copy of this catalog, B-6505, write Westinghouse Electric Corporation, P. O. Box 2099, Pittsburgh 30, Pa.

2 Montana Co-ops Save Through Joint Use of Poles

The number of electric cooperatives entering into joint use agreements with telephone companies has increased from 75 to 425 since 1949, when REA first issued standardized forms covering joint use of wood poles and wire carrier.

In Circle, Mont., the managers of McCone County Electric Cooperative, Inc. and Mid-Rivers Telephone Cooperative, joint use signers, point to a lot of reasons for sharing their pole facilities.

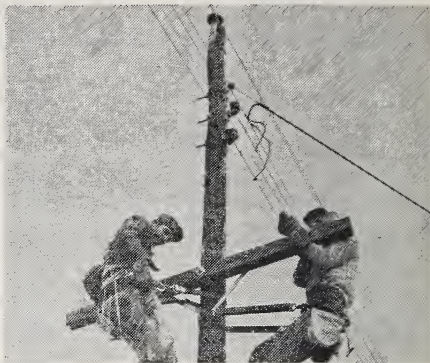
Mid-Rivers expects to cut in a good part of its \$1,482,000 REA-financed dial system this spring. It will serve around 1,700 subscribers at the start. Its service area is as large as some eastern states and the system requires nearly 2,000 miles of poles line, much of which will be joint use with McCone.

The joint use agreement Mid-Rivers signed with McCone last year calls for the telephone co-op to share about 700 miles of the electric borrower's pole line. In turn, McCone will use some 50 miles of the telephone borrower's facilities.

In talking with Managers Ellis Jones of Mid-Rivers and J. B. Appenzeller of McCone, you get an idea of some of the talking points for joint use arrangements.

Says Mr. Jones, "Joint use of the pole facilities seems like a more efficient and economical use of REA funds. It should also save money for our co-op and members.

"From a public relations viewpoint it looks better to have one pole line running through a farmer's field than two. You can't blame landowners for balking at granting easements for two



Installing telephone lines on electric pole.

sets of lines.

"Also over much of our telephone line there will be only one set of poles to repair and maintain.

"We don't believe our joint use agreement will pose any real technical problems, at least none that can't be worked out. We've been told that joint use occasionally brings on false ringing and induced current. But electrical engineers will work the bugs out of that one."

Manager Appenzeller of McCone sees things this way:

"Communication is poor in our area and our joint agreement with Mid-Rivers promises to give rural people better service all around.

"Both McCone and Mid-Rivers stand to save money on poling, staking and surveying, plus the expense of acquiring rights-of-way.

"Safety is a big feature of our joint use agreement too. We figure joint use of poles will be a real safeguard at telephone and electric crossings."

McCone and Mid-Rivers are working out an agreement whereby the electric borrower would maintain and repair the telephone borrower's out-

side plant. This agreement is expected to save the Mid-Rivers borrower the cost of buying repair equipment and radio equipped cars. Under their plan McCone bills Mid-Rivers for work done.

For these two borrowers, joint use seems a good bet. Other borrowers with an eye to cash savings, safety and other benefits are taking a closer look at how joint use arrangements can serve their needs.

REA encourages borrowers to consider joint use because it furnishes and improves telephone and electric service to a wide number of users. In many cases joint use of poles affords real economies in both initial investment and operation when all factors are considered.

Early REA electric borrowers had rural rights-of-way pretty much to themselves—years ahead of telephone borrowers. Now electric borrowers have the opportunity of sharing their poles and rights-of-way so that rural people in their areas can have telephone service at rates they can afford.

REA makes it plain that joint use is not in itself a guarantee of savings in all areas and all situations. Borrowers should give careful consideration to all economic factors involved.

Joint use is working out best for borrowers in: (1) thinly populated areas—a few residents per mile; (2) areas where line construction costs are high, such as rocky, swampy, mountainous, or inaccessible sections; (3) areas of heavy seasonal storm damage; and (4) areas where telephone and electric borrowers serve much the same territory and membership.

REA telephone borrowers like the money and labor saving advantages offered in joint use agreements with distribution borrowers and private power companies, especially where pole lines run through rough terrain.



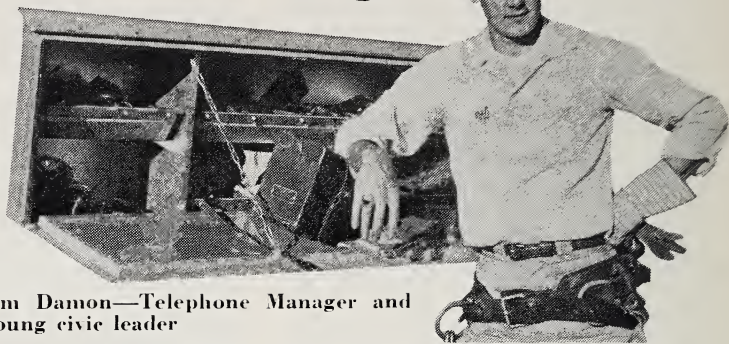
In joint use, one pole line does the work of two.

And many electric borrowers have found pole rentals an income builder.

New telephone borrowers contemplating joint use agreements should plan their system designs accordingly.

Policies and procedures covering joint use, together with a suggested general agreement for joint use of pole facilities are included in REA Bulletins 305-1R1 (Telephone) and 5-1R1 (Electric).

Oregon Boasts Youngest Telephone Manager



Jim Damon—Telephone Manager and young civic leader

When Oregon Telephone Corporation of Grant County, Oregon cuts in its new dial system next summer, all operations will be handled by one of the country's youngest president-managers, 25 year-old Jim Damon.

Mr. Damon, former air force radio technician, is in full charge of the REA financed modernization of Oregon Telephone's system, serving rural residents along U. S. (Three Flags) Highway No. 395 in John Day Valley.

With their \$335,000 REA loan, officers of Oregon Telephone are rebuilding some 110 miles of old pole line from the ground up, adding 26 miles of new line, installing new exchanges at Mt. Vernon, Prairie City, Dayville and Bates, and constructing a new office in Mt. Vernon. Dial service is expected to be extended to 850 subscribers by mid-July.

In 1936 when Jim Damon's dad, Robert W. Damon, and others purchased the old Dayville Canyon Telephone Company and formed their new company, the system consisted of 36 customers and 10 lines. Some 100 more customers were added after South Fork, Dayville and Bradford Telephone Companies were taken into

the Corporation.

Under leadership of the Damon family, Oregon Telephone began improving service. One of the major early steps they took was installation of a dial exchange, serving 70 Dayville residents, financed with a \$10,-000 RFC loan.

The second of two REA loans was approved in June, 1954 and work on installation of poles, lines and lead-ins is now under way.

When Oregon Telephone's board meets today it's pretty much a family get-together. His father and mother Mr. and Mrs. Robert W. Damon serve as vice-president and secretary-treasurer respectively, Directors include Jim Damon's wife, Irene, and Mrs. Ellen Stockdale, a great aunt.

Young Mr. Damon has to be sort of a Jack-of-all-trades in carrying on as president-manager of Oregon Telephone. He has various jobs such as trouble-shooter, business manager and handyman. At times he takes to the field to drum up new telephone accounts.

Says young Damon, "All these irons in the fire keep me hopping, but, you know, I've never been happier in my life."



AN all-out equity and membership sign-up with township committeemen explaining the talking points of cooperative action to farmers has paid off handsomely for leaders of the new Federated Telephone Cooperative, Benson, Minn.

Four months of door-to-door calling netted some 930 paid-up applications for service or 72% of the potential subscriber membership. The co-op now seems well on its way to reaching its goal of a 75% sign-up by cut-in time early in 1956.

Getting Federated ready for its cut-in date has been a team job with board president Willard Anderson, J. Berger Johnson, vice president; Don Wellendorf, secretary-treasurer; Harvey Richardson, Walter Svor, Fred Fisher and Emil Steffen all working with individual members in completing organizational steps. And members and directors have high praise for the coordinating job being done by Victor Hanson, manager of Agra-Lite Cooperative.

Says Mr. Anderson, "We've gotten very good results through all stages of organization by dealing directly with farmers and getting them together to talk over matters of finance and other problems.

"Hard work put in by volunteers made our job a lot easier. Township committees spent much time away from their own farm operations and did it without one cent of cost to the co-op."

Federated's founders got a good idea of the kind of cooperation they could expect from rural residents back in 1950 when some 1379 farmers paid a subscription fee of \$5 to finance a survey of the telephone area.

But when Federated's \$1,239,000 REA loan came through last May and plans were laid for an equity sign-up, some thought the goal of a 75% paid-up membership by the cut-in date might be a little high.

By the time the every member canvass got under way in July the co-op board faced some real obstacles. There were signs that small grain harvests might not be as good as in former years with money likely to be shorter. Then too farmers were busy with summer chores and later with harvest work. Volunteer callers had the same problems.

In spite of chores, harvests and all, township visiting committees set up in parts of Stevens, Big Stone and Swift counties got a good welcome from farmers. Rural people liked the idea of fellow farmers dropping in and talking over the co-op's plans. Visits cleared up questions in farmer minds about equity payments and progress of the new telephone system.

It would be difficult to single out the hardest and most successful signer-uppers among the various committees.

The high percentage of sign-ups assures farmers of a modern, fully automatic telephone system.

1954 Highest Year In Telephone Loans

Despite a slackening off of telephone loan allocations during the late summer and fall months, REA approved more funds for improvement and extension of rural telephone service during the calendar year ended December 31, 1954 than in any other calendar year of the program. Gross telephone loans for the 1954 calendar year totalled \$66,340,000—more than \$16 million above the \$50,112,000 of the 1953 calendar year.

TELEPHONE LOANS BY MONTHS

<i>Month</i>	<i>1953 Gross Allocations</i>	<i>1954 Gross Allocations</i>
January	\$ 3,983,000	\$ 3,088,000
February	2,780,000	2,992,000
March	1,743,000	5,861,000
April	2,648,000	5,911,000
May	793,000	6,293,000
June	3,790,000	16,186,000
July	2,427,000	2,027,000
August	3,496,000	2,253,000
September	8,627,000	6,836,000
October	9,891,000	4,461,000
November	4,993,000	2,373,000
December	4,941,000	8,059,000
Total for Year	\$50,112,000	\$66,340,000

Since the very first telephone loan at the beginning of 1950, REA has made gross allocations of \$227,649,000, representing 523 separate loans to 316 borrowers. Rescissions during these years, however, have accounted for something over \$19 million, leaving net loans amounting to more than \$208 million.

Almost 40 percent of this money has already been advanced to telephone companies and cooperative associations in accordance with their scheduled plans to provide improved service to 215,830 existing subscribers and telephones for the first time to 240,969 additional farm families and other rural establishments.

Rural telephone systems occasionally have the opportunity to offer special services to subscribers. The Winnebago Cooperative Telephone Assn., Thompson, Ia., reports this example:

"Recently the Rake school inaugurated a new shop program. Since space was at a premium in the school building, the shop was set up in the former creamery which is located 2½ blocks northwest of the school building. Being apart from the main school building, some form of intercommunication between the two buildings was necessary. The system also had to provide outgoing and incoming calls to the shop."

The Winnebago Cooperative Telephone Association installed a key telephone system using two telephones of a special design which by means of signalling buzzers will provide intercommunication between the two buildings and also outside telephone service to the shop through the superintendent's office. The new communication system reduces considerably the number of errands that must be run between the two buildings.

WHAT'S

USDA Information Bulletin 123, *Stall Barns for Dairy Cattle* by Thayer Cleaver, Harold J. Thompson and Robert G. Yeck, May 1954. Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Price 10 cents.

This 16 page bulletin provides detailed information on the following general headings; the dairy barn and pen areas; young stock, maternity hospital, calf and bull pens; alleys; requirements for grade A milk production selecting a dairy barn plan; feed and bedding storage; details of design; equipment; building costs; and how to obtain plans. To clarify the content it contains many illustrations and plans.

Illinois Circular 714, *Handling Silage and Concentrates for Beef Cattle in Dry Lot* by R. N. Van Arsdall and Thayer Cleaver. January 1954. University of Illinois, College of Agriculture, Urbana, Illinois.

Observations were made on 36 Illinois farms where cattle were fed in dry lot. These cattle feeders have found ways to cut down the amount of time and effort spent on feeding. This has been accomplished by putting in machinery and equipment to do part of the job, by designing and locating their structures to save time and travel, and try making it possible to do more of the work with equipment. By working out a good system for silage, the biggest feed-handling problem is solved. The concentrates can be handled in about the same way with the same equipment.

USDA Technical Bulletin 1088, *Home Washing Machines—Operating*

Characteristics and Factors Affecting Performance by Enid Sater Ross, Katherine Taube and Dorothy Skinner Greene. June 1954. Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Price 15 cents.

The operating characteristics of automatic, nonautomatic and semiautomatic washers was studied to determine their ability to remove soil. No one type of washing machine mechanism was consistently superior in soil removal. The total water requirements of the automatic washers ranged from 26 to 60 gallons and the hot water from 13 to 39 gallons per load. The centrifugal extractors removed more water per load than the wringers. In addition to these other operating characteristics were investigated.

Michigan Extension Bulletin 322, *More Money for Clean Eggs* by L. E. Dawson. April 1954. Michigan State College, East Lansing, Michigan.

Clean eggs always sell for more money. A little extra care of the hens, plus some simple cleaning steps discussed in the bulletin may make the difference. Instructions are included on cleaning dirty eggs mechanically and by washing.

How to Make 'Light' Work of Desk Work by Myrtle Fahsbender. Copies are available free of charge in quantities up to 250, through Westinghouse Farm Youth Activities Information Services Department, Westinghouse Electric Corporation, P. O. Box 2278, Pittsburgh 30, Pa.

A single sheet which outlines the requirements of a desk lamp or lamps properly placed to protect the eyes from the discomfort of glare and the annoyance of contrasts and shadows. Wrong and right desk lighting are illustrated.

For these two borrowers, joint use seems a good bet.

**UNITED STATES
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**PENALTY FOR PRIVATE USE TO AVOID
PAYMENT OF POSTAGE, \$300
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**Loans Approved November 25, 1954
Through December 24, 1954**

ELECTRIFICATION

\$1,270,000	South River Electric Membership Corp., Dunn, N. C.	1,000,000	Guadalupe Valley Electric Cooperative, Gonzales, Texas
405,000	Tri-County Electric Membership Corp., Gray, Ca.	445,000	Hamilton County Electric Cooperative Assn., Hamilton, Texas
335,000	Flint Hills Rural Electric Co-op. Assn. Council Grove, Kans.	138,000	Tri-County Rural Electric Company, Freehold, N. J.
205,000	Thumb Electric Co-op of Michigan Uby, Mich.	390,000	C.M.S. Electric Cooperative, Meade, Kans.
50,000	C & L Rural Electric Cooperative Corp., Star City, Ark.	15,000	Chariton Valley Electric Cooperative, Albia, Iowa
995,000	Southwest Louisiana Electric Membership Corp., Lafayette, La.	105,000	Grayson-Collin Electric Cooperative, Inc., Van Alstyne, Texas
50,000	Jefferson County Electric Membership Corp., Louisville, Ga.	50,000	Cap Rock Electric Cooperative, Stanton, Texas
514,000	Farmers Electric Co-op. Corp., Newport, Ark.		
230,000	Northern Electric Cooperative, Inc. Aberdeen, S. Dak.		
210,000	Webster Electric Co-op., Marshfield, Mo.		
490,000	Egyptian Electric Co-op. Assn. Steeleville, Ill.		
94,000	Franklin County Rural Public Power District Franklin, Neb.		
335,000	Inter-County Rural Electric Cooperative Corp., Danville, Ky.		
198,000	Sheyenne Valley Electric Cooperative Finley, N. Dak.		
385,000	Butler County Rural Electric Cooperative, Allison, Iowa		
809,000	Municipal Utility District Sacramento, Calif.		
50,000	French Broad Electric Membership Corp., Marshall, No. Car.		

TELEPHONE

\$ 215,000	Roosevelt County Rural Telephone Cooperative, Portales, New Mex.
237,000	Smithville Telephone Co., Ellettsville, Ind.
354,000	McDaniel Telephone Co., Salkum, Wash.
120,000	Arvig Telephone Co., Pequot Lakes, Minn.
700,000	Northeast Missouri Rural Telephone Co., Lancaster, Mo.
1,170,000	Northern Kansas Telephone Co., Effingham, Kans.
125,000	Verona Telephone Co., Verona, Mo.
484,000	Palestine Telephone Co., Palestine, Ill.
233,000	The Edna Telephone Co., Edna, Kans.
37,000	Carlos Telephone Co., Alexandria, Minn.
404,000	Coastal Utilities, Inc., Hinesville, Ga.
1,499,000	BEK Telephone Mutual Aid Corp., Steele, North Dakota